# FIRE BEHAVIOR OBSERVATIONS IN

# BEETLE KILLED TREES

# IN LEWIS & CLARK ,

# JEFFERSON,

# BROADWATER,

# AND

# SW PORTION OF CASCADE COUNTY

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**Fire Behavior Analyst**
**LIST TEAM**

**Rocky Infanger**
**Fire Chief**
**Wolf Cr./Craig FSA**

# Davis Fire Helena National Forest
# AUGUST 2010

JAMES E. LOTAN

Fig. 1. Lodgepole pine heavy fuels 40 years after mountain pine beetle epidemic. This fuel type was responsible for the difficulty of controlling the Sleeping Child Fire of 1961. Two Bear Cr., Stevensville Dist., Bitterroot NF, Mont. 1970.

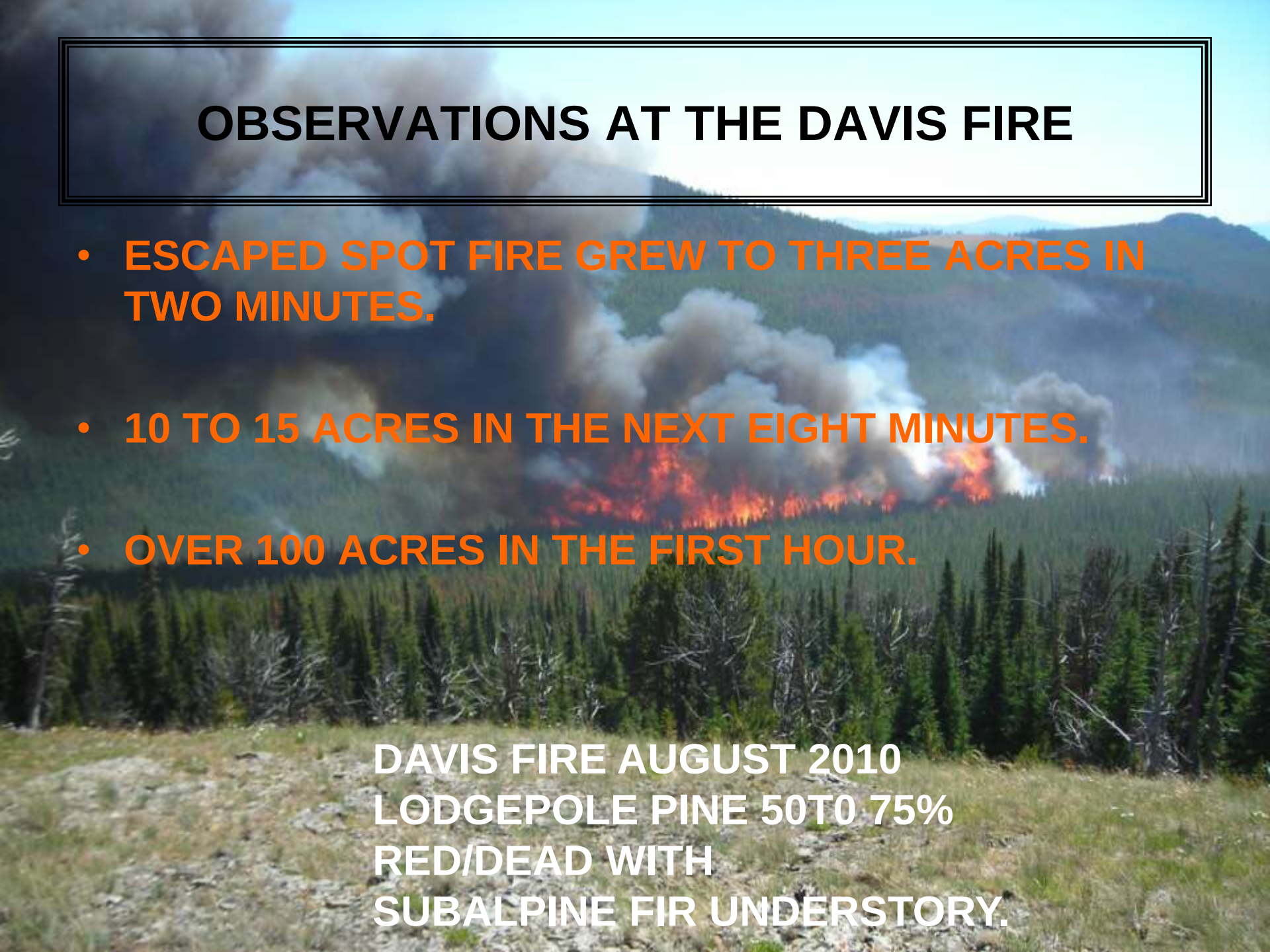
- Lodgepole pine heavy fuels 40 years after mountain pine beetle epidemic. This fuel type was responsible for the difficulty of controlling the 28,000 acre Sleeping Child fire of 1961.

Lotan, James E. 1976. Cone Serotiny-Fire Relationships in Lodgepole Pine.


AUG 14 2006

# OBSERVATIONS AT THE DAVIS FIRE

- ESCAPED SPOT FIRE GREW TO THREE ACRES IN TWO MINUTES.
- 10 TO 15 ACRES IN THE NEXT EIGHT MINUTES.
- OVER 100 ACRES IN THE FIRST HOUR.



DAVIS FIRE AUGUST 2010
LODGEPOLE PINE 50T0 75% RED/DEAD WITH
SUBALPINE FIR UNDERSTORY.

Dscn1727.mov

- Fire-killed lodgepole pine can be expected to undergo another fire 40 to 60 years hence from fuels created by the first fire.

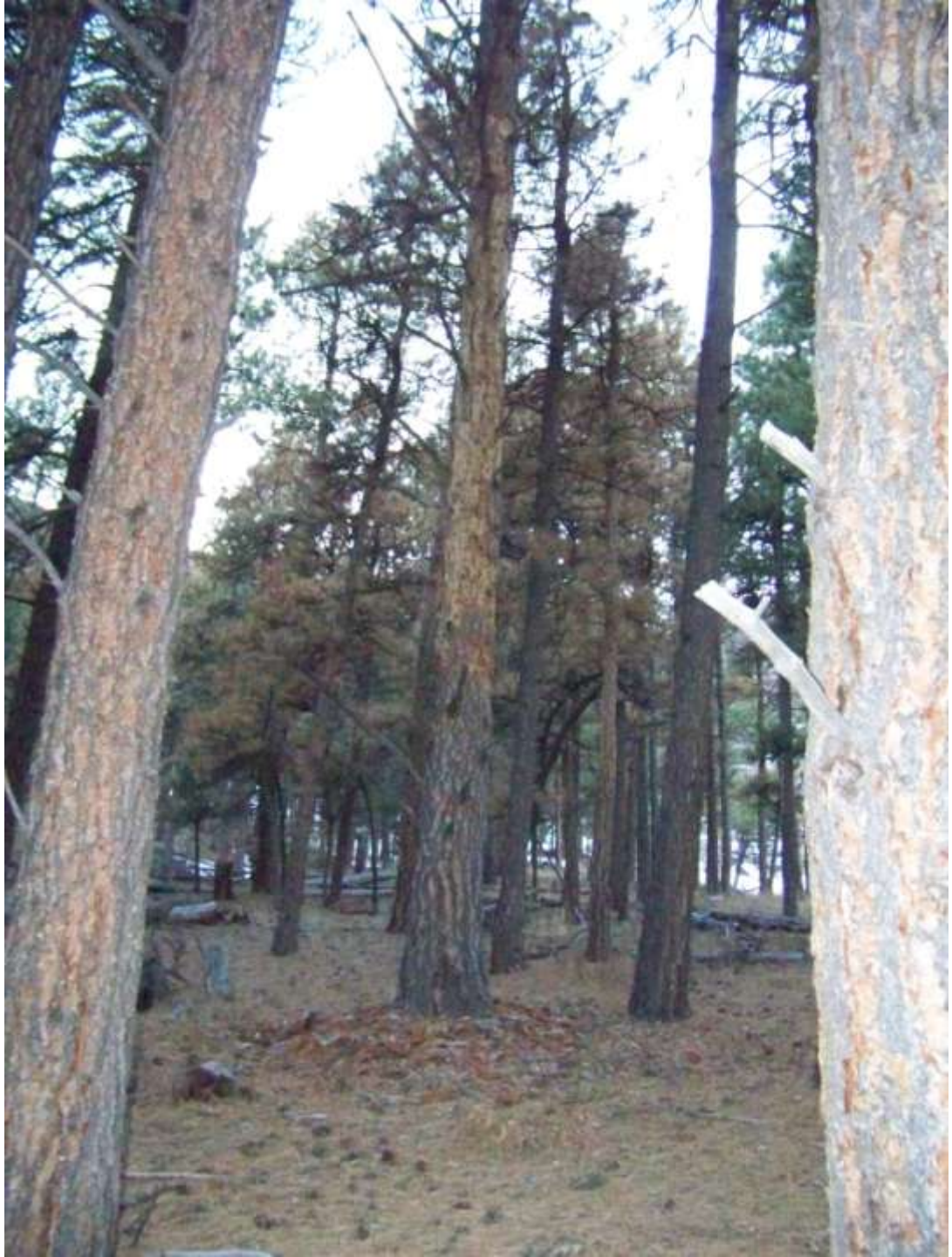
Brown, James K. 1975. Fire cycles and community dynamics in lodgepole pine forests. In Management of Lodgepole Pine Ecosystems.

# Antelope Fire Yellowstone NP September 2010

The largest fire in Yellowstone this year has burned over 2,500 acres.

This lightning-caused fire has spread through an area burned in the 1988 North Fork Fire, where the fuels include lodgepole pine, tall grass and abundant downed logs.

# Mac Pass Fire Helena NF
# Sept. 2009

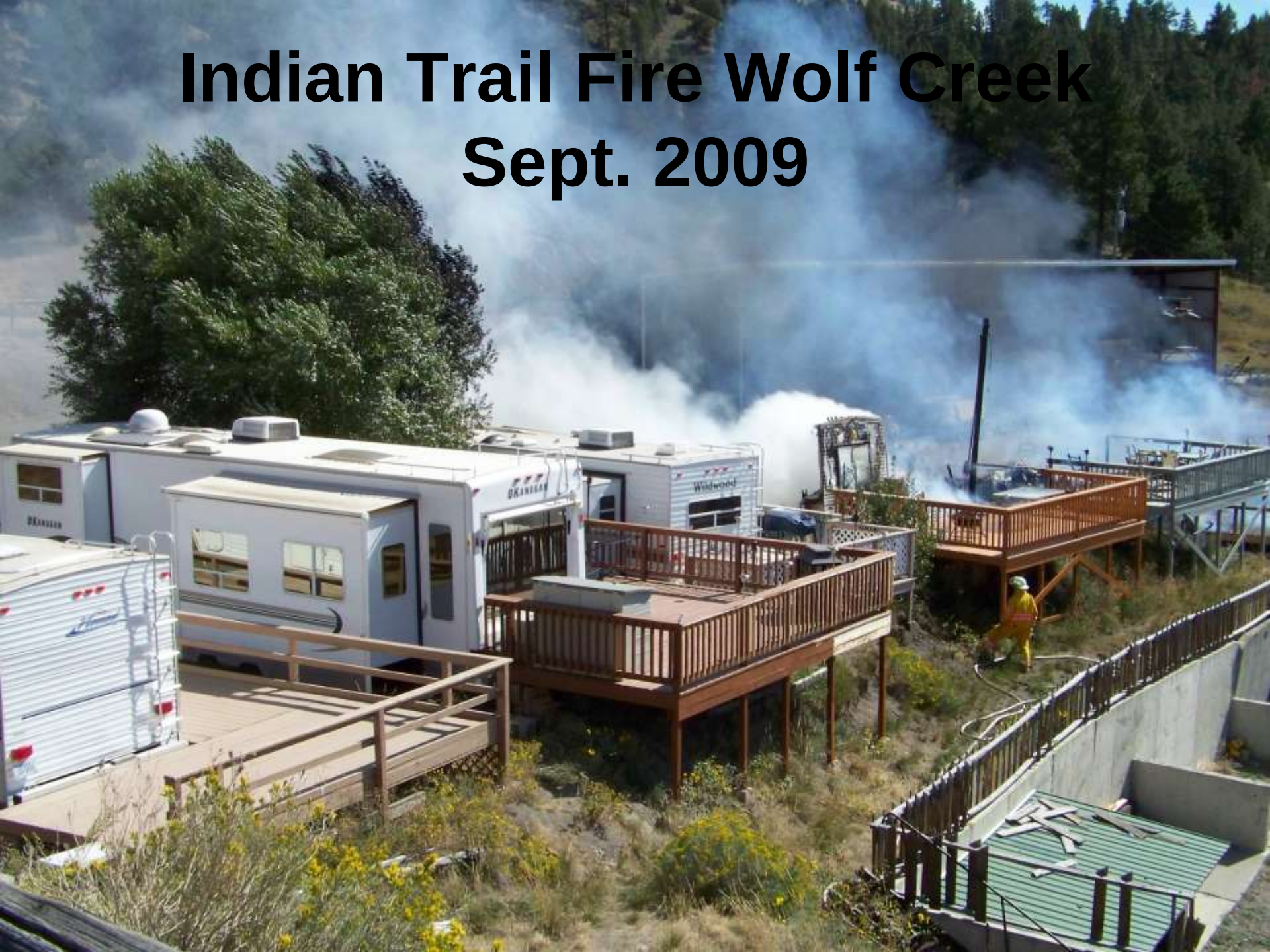


# WILDLAND/URBAN INTERFACE

- 17 MILLION HOMES SINCE 1990 Nation Wide.
- 38 MILLION PEOPLE
- 360,000 of them in Montana, Idaho, and Wyoming
- Live In Homes valued at $21 Billion Dollars!
- In L&C County, as of 2005, 2300 homes are located in a
- high to severe fuel hazard representing 8000 residents on property valued at $145 million.

# Bucksnort Fire Tri-Lakes Area 2000

# Indian Trail Fire Wolf Creek
# Sept. 2009




North Fork Fire Wolf Creek
2009

# THIRTYMILE ENTRAPMENT FIRE

- "Hundreds of embers deposited by the wind set up the opportunity for hundreds of spot fires to ignite at the same time and coalesce, creating, in affect, a mass ignition." T. Leuschen, 2005.


7.19.2001


9
3

# Hydrophobic Soils Following Intense Fire

# CONCLUSIONS/SUMMARY IN BEETLE KILLED TREES

- **More intense surface fires to crown fires faster.**
- **Red/green mix supports intense, rapid spreading crown fire.**
- **Profuse short and long-range spotting.**
- **Not particularly severe weather.**
- **Subalpine fir understory can provide the ladder fuel to initiate a crown fire in Lodgepole pine stands.**
- **Thickets of ponderosa pine reproduction can provide the ladder fuel to initiate a crown fire in ponderosa pine stands, particularly with needle drape.**

# ARE WE READY?

- **LOCAL INCIDENT SUPPORT TEAM**

  ***The LIST team is a rapid deployment team established to provide management support to a Tri-county incident until an Incident Management Team arrives. It is made up of a cross section of individuals from local Volunteer Fire Departments and Agencies.**

- **POPULATION PROTECTION PLANS**

  ***These pre-incident plans have been completed by 20 volunteer fire departments in the Tri-County area under the auspices of the TRI-COUNTY FIRESAFE WORKING GROUP. They include fuel hazard mapping and:**

  **>EVACUATION ROUTES (with mitigation needs to keep open.)**

  **>EVACUATION PROCEDURES**

  **>ACCESS CONTROL POINTS**

- **MITIGATION**

  **>AROUND HOMES (Over 1,000 home sites have been treated.)**

  **>EVACUATION ROUTES**

- **TRAINING WITH EMPHASIS ON FIRE BEHAVIOR. (20 volunteer firefighters have completed on-line S-290, Intermediate Fire Behavior!)**